

Date: Wednesday, 09/04/2008 9:18:29 AM
 User: Julie Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : PANEL-350 UPPER BULKHEAD
 Job Number : 38504
 Estimate Number : 13100
 P.O. Number :
 This Issue : 09/04/2008 S.O. No. :
 Prsht Rev. : NC Part Number : D36553
 Drawing Number : D3655 REV A
 Project Number : 00204
 First Issue : / / Type : THERMOFORMING Drawing Revision : A
 Material :
 Previous Run : 37664 Due Date : 30/04/2008 Qty: 2 Um: Each
 Written By :
 Checked & Approved By : DD 08-4-09
 Comment : Est. Rev. A 07/12/13 DL verified by:DD

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 MLEXS093F600607 GE PLASTICS LEXAN SHEET



Comment: Qty.: 23.0000 sf(s)/Unit Total : 46.0000 sf(s)
 GE PLASTICS LEXAN SHEET
 batch: 107574

BB 08/04/09 x2

2.0 HAND FINISH TH HAND FINISHING THERMOFORMING



Comment: HAND FINISHING THERMOFORMING

1) Cut Blanks to fit frame size

BB 08/04/09 x2

3.0 THERMOFORMING THERMOFORMING MACHINE



Comment: THERMOFORMING MACHINE

Thermoform as per Dwg. D3655-3and Folio FTA 017 using tool DT 8985

Dwg. Rev. A3655
 Folio Rev. A

BB 08/04/09 x2

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE





Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Visually inspect for proper formation of each part

BB 08/04/09 x2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
08.04.10	1	Change material usage to 34.66 sq ft to remove left over unusable material from stock. (correct estimate) #13100	Ph	08.04.10		 08.04.17	 08.04.24	

Part No: D3655-3 PAR #: NA Fault Category: Prod/Manufacturing NCR: Yes No DQA: D Date: 08/08/17
 used in D350-766-011 Eng/Dwg QA: N/C Closed: A Date: 08/08/17

NCR: 38504		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08.04.11	3	Dim 45.5" is 44.5" Dim 19.9 is 20.9"	<i>[Signature]</i> 08.04.11 pu 08/04/24	DWG DID NOT MATCH MOLD DIMS. PARTS ACCEPTABLE. REF. DS EMAIL	<i>[Signature]</i> 08/04/24	<i>[Signature]</i> 08.04.11 pu 08/04/24	<i>[Signature]</i> 08.04.11 pu 08/04/24	<i>[Signature]</i> 08.04.11 pu 08/04/24

NOTE: Date & initial all entries

Date: Wednesday, 09/04/2008 9:18:29 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: PANEL-350 UPPER BULKHEAD

Job Number: 38504

Part Number: D36553

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



08/04/11 Dh
x2

Comment: SECOND CHECK

6.0

HAND FINISH TH

HAND FINISHING THERMOFORMING



08/04/11 Dh
x2

Comment: HAND FINISHING THERMOFORMING

1) Trim to Finished Dimensions as per dwg D3655

7.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



08/04/11 Dh
x2

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Check dimensions to ensure conformity to drawing tolerances.

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/04/11 (x2)

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

08/04/11 2

10.0

QC21

FINAL INSPECTION/W/O RELEASE



08/09/16 H

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



mf 08-09-16

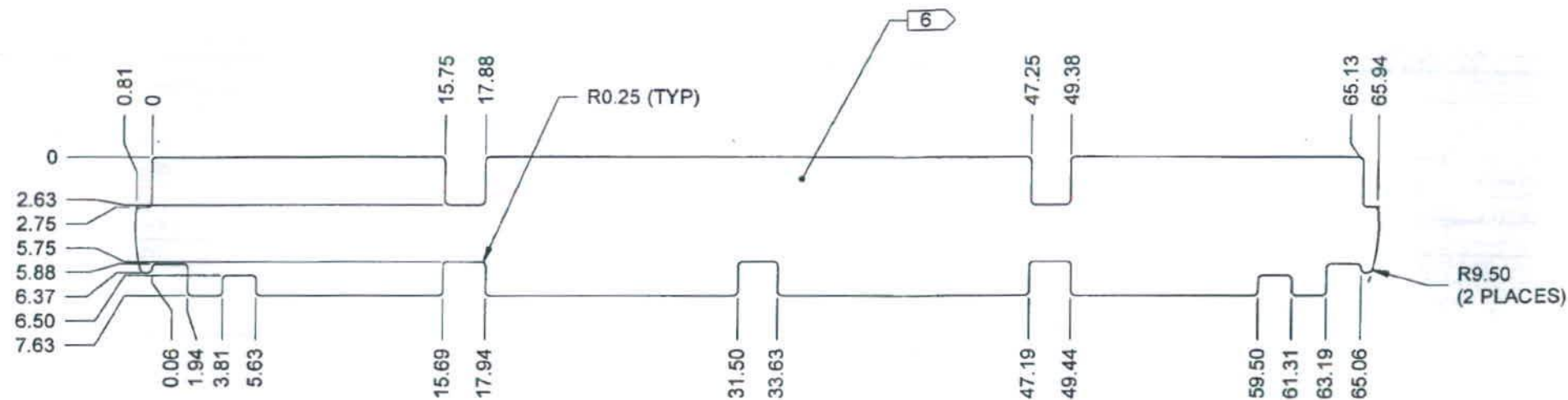
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3655-1 PANEL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38509

D3655-1 NOTES:

- 1) MATERIAL: F6006 SUEDE/POLISHED GY5B133 LIGHT GREY LEXAN SHEET 0.093 THICK (REF DART SPEC MLEXS.093-F6006-07)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: ETCH P/N AND B/N ON SMOOTH SIDE OF PART
- 7) WEIGHT: 1.8 lbs

A	NEW ISSUE	LE	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	LE		
CHECKED	MP	DRAWING NO.	REV. A
MFG. APPR.	MP	D3655	SHEET 1 OF 2
APPROVED	MP	TITLE	SCALE
DE APPR.	MP	PANEL	NTS
DATE	08.03.03	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DART AEROSPACE LTD	WORK ORDER: 38504
Description: Panel 350 UPPER Bulkhead	Part Number: D36553
Inspection Dwg: D3655 Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

(Step 4) Thermoforming
Visual Inspection Sign-off

Description	Initials
Tight, even radius throughout part	DL-
Acceptable shape definition	DL-
Acceptable texture retention	DL-
Free of visual flaws (bumps, cracks, voids, etc.)	DL-

(Step 6) Trimming
FAI Checklist

Inspect dimensions highlighted on inspection sheet drawing D36553 Rev. A and record below

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
45.5	.1	44.5		✓		E-mail to Acceptable
19.9	.1	20.9		✓		E-Mail to Acceptable
.050	M.N.	.054	✓			

Measured by: DL	Audited by: [Signature]	Prototype Approval: [Signature]
Date: 08.04.10	Date: 08.04.24	Date: 08.04.10

Rev	Date	Change	Revised by	Approved
		New Issue		

Chris Provencal

From: David Shepherd [dshepherd@dartaero.com]
Sent: April 11, 2008 3:31 PM
To: 'Chris Provencal'
Cc: 'Mike Petsche'; 'Leger, Daryl'; 'Bill Beckett'
Subject: FW: NCR D3655-3
Attachments: Image1.jpg; D3655-RevA.pdf

Mike/Daryl,

I'm not very happy about this to say the least. We just went through the exercise of making a set of parts, trimming them to templates, conforming them to the drawings, and installing them in an aircraft. How can we have been off by 1"? This is totally unacceptable in my opinion. Someone along the line has dropped the ball. How could we have conformed the parts if they were 1" different than the drawings?

My guess is that all fingers will be pointed to Leanne because she is no longer there to defend herself, but if the drawings were no good, then why did you both sign them???? This is the kind of stuff you should be checking. I cannot do this myself from Calgary.

Now we're going to spend more time and money updating Solidworks models and doing drawing updates. We just certified this. These types of issues should have been sorted out on conformity. That was the whole point.

Chris,

If the parts match what is in the aircraft, they will be acceptable. But I don't think we should make any more without doing a PROPER FAI and checking against the drawing.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Friday, April 11, 2008 7:41 AM
To: dshepherd@dartaero.com
Cc: mpetsche@dartaero.com; D Leger
Subject: NCR D3655-3

David,

For the D3655-3 Panel (350 interiors), the dwg dimension 19.9" is 20.9", dwg dimension 45.5" is 44.5". Ref attached pic. The part was made to the mold. The dwg was evidently created before the mold, and the dimensions were never updated.

The 20.9" width of the 'slot' fits with the mating part correctly; 19.9" would be too small and would have a sloppy fit. A verified this myself.

The dwg length of 45.5" is impossible to achieve from the mold. Daryl made the part as long as possible. The

parts have evidently been fit into the aircraft and I'm told this dim works.

The dwg obviously needs an update. In the meantime, can we accept this deviation?

-Chris

No virus found in this incoming message.

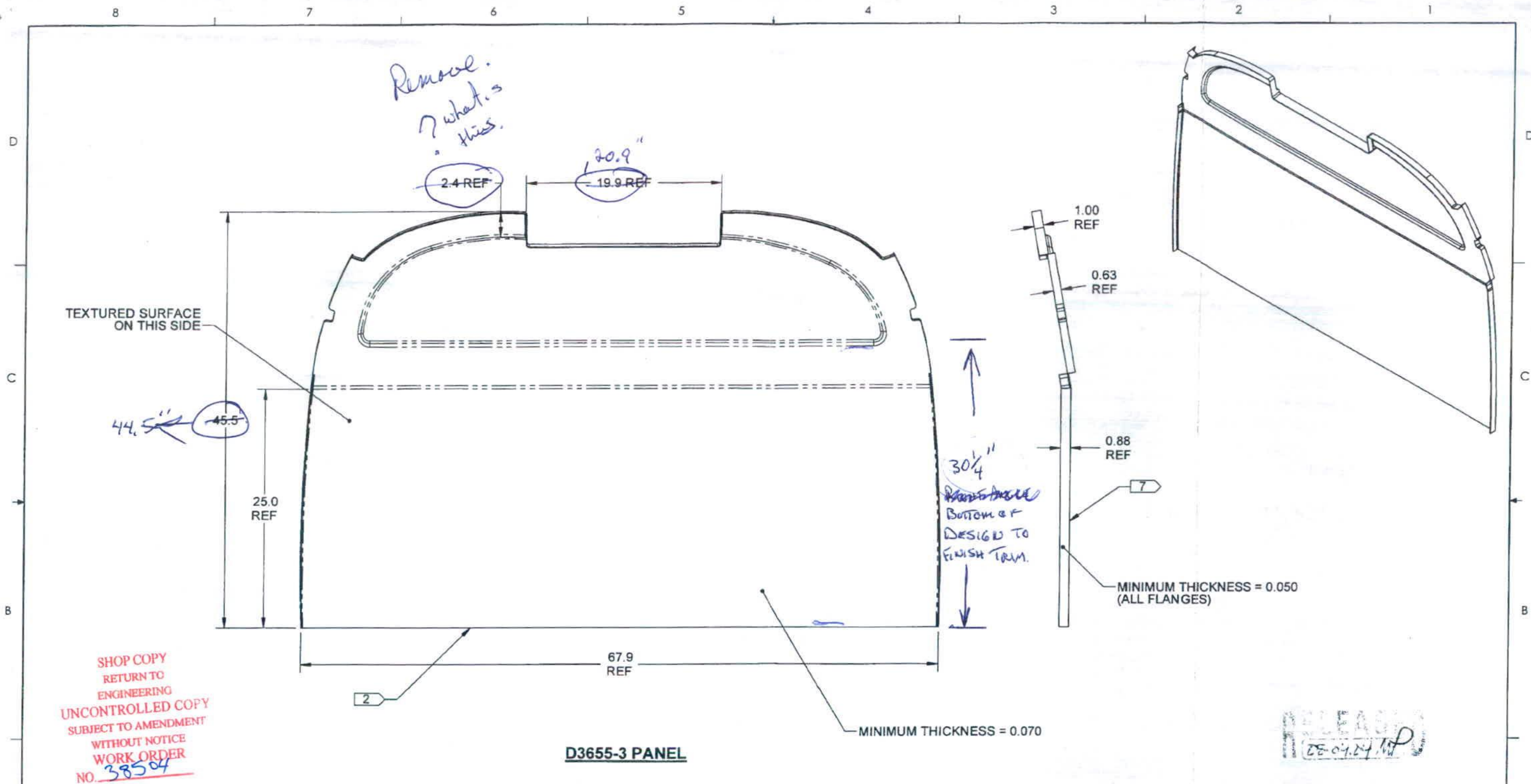
Checked by AVG.

Version: 7.5.519 / Virus Database: 269.22.11/1371 - Release Date: 4/10/2008 12:23 PM

No virus found in this outgoing message.

Checked by AVG.

Version: 7.5.519 / Virus Database: 269.22.12/1373 - Release Date: 4/11/2008 9:17 AM



D3655-3 NOTES:

- 1) MATERIAL: F6006 SUEDE/POLISHED GY5B133 LIGHT GREY LEXAN SHEET 0.093 THICK (REF DART SPEC MLEXS.093-F6006-07)
- 2) TOOLING: THERMOFORM PER MOLD DT8985 PER QSI 022 TRIM PER MOLD DT8985 EXCEPT WHERE NOTED
- 3) FINISH: NONE
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: ETCH P/N AND B/N ON SMOOTH SIDE OF PART
- 8) WEIGHT: 10.8 lbs

DESIGN	LE	DART AEROSPACE LTD	
DRAWN	LE	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PA	DRAWING NO.	REV. A
MFG. APPR.	PA	D3655	SHEET 2 OF 2
APPROVED	W	TITLE	SCALE
DE APPR.	W	PANEL	NTS
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